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LIME



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Makers of

ecologic®

Brand
Mortar & Plaster
For Historic Restoration
and Green Building

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Ecologic™ LimeCrete Binder

Ecologic™ LimeCrete Binder is a pre-blended binder that can be combined with a variety of aggregates to create a “greener” alternative to pure Portland cement binders but produce a more robust and structural concrete than a Pure NHL 5 and aggregate lime concrete mix. See our Pure NHL 5 lime concrete advice regarding its use in historic structures when placed over crushed stone atop earthen floors to maintain floor breathability. Ecologic™ LimeCrete Binder is intended to be used with user-sourced aggregates for applications such as to cast chimney pots and ornaments, make lime concrete balconies, cast shower pans, create ponds, make chimney crowns and Cast Stone. It is also intended to be used to make a compatible lime concrete mortar mix to set and point granite treads, new flagstone and paver brick which are laid on concrete bases and to either point them or to repoint these and other dense, well-boned, non-moving units such as Cast Stone copings.

Benefits

Ecologic™ LimeCrete Binder provides a greener alternative than gray Portland cement binders with fly ash or fillers. Ecologic™ LimeCrete Binder has a sulfate resisting quality so that future salt attack is lessened. This also reduces future efflorescence issues. The excellent Modulus of Elasticity of Ecologic™ LimeCrete Binder helps joints that often fail between machine cut flagstone edges, granite steps, cast stone copings to stay better knit to the edges of the units and hold up better in exposed weather conditions with heavy foot traffic and extreme freeze-thaw cycles.

Ecologic™ LimeCrete Binder can be naturally colored with aggregates or by adding not more than 10% of the total weight of the binder using alkali and UV stable pigments.

Mixing

Ecologic™ LimeCrete Binder must be mixed for 15

minutes with appropriate clean, sharp aggregates and clean, potable water. Start with 2/3 of a gallon of water per 50 lbs of mixed material (binder and aggregate). Slowly add water until the minimum amount necessary to reach a workable consistency is reached. Remember that most bulk purchased aggregates are slightly damp, and this dampness can decrease the amount of mixing water necessary. Keep water ratios consistent between batches to ensure consistency in material performance and appearance. Judge workability only after five minutes of continuous mixing. The rule of thumb is to use minimum mixing water to be workable and maximum curing water to obtain optimal strength and durability.

Aggregates should be added in proportion to the mix strength for the intended service application. In general, ASTM C270 recommends adding aggregate totaling not less than 2 ½ not more than 3 ½ times the volume of the binders in a concrete or mortar mix.

Aggregate Selection and Application

For work on joints 2” or above or when pouring slabs, an aggregate conforming to ASTM C33 should be used. When using Ecologic™ LimeCrete Binder for setting and pointing flagstone & brick pavers placed over cured concrete or existing or setting and pointing new granite steps and cast stone coping stones when joints are less than 2” wide or when creating a chimney crown “wash” mix one 5- gallon pail of Ecologic™ LimeCrete Binder to two to three 5- gallon pails of an Ecologic™ Graded & Dried Sand blend (G). For maximum strength & bond it is advised to replace 15% of the clean mixing water with Ecologic™ Acrylic Latex Additive.

When using Ecologic™ LimeCrete Binder to make Cast Stone elements using rubber molds or making formed or free-hand structural lime concrete add two 5-gallon pails of Ecologic™ Graded & Dried Sand

blend (G) plus 2-3 pails of ½” or ¾” clean crushed stone or pea gravel basing the aggregate size on the final service application intent. Consider creating a stainless steel armature to hold up projecting or massive castings. Incorporate non-rusting rebar welded or tied and centered in large lime concrete pours such as for balconies and ponds, etc. Slight rinsing with water to expose pea gravel or aggregates can be done the same day with the possibility of a slight agitation scrub using a stiff nylon brush to expose the aggregate.

Mist the substrate and any adjacent masonry units, all previous cured concrete or mortar installations with clean water immediately before a new application but only as a dampening to control absorption. No standing water should remain during a new application. If substrate is retaining inordinate amounts of moisture due to rising damp, bad flashing, or moisture from a chimney cavity, this must be corrected before new work begins. ASTM has reports on normal absorption rates for most building materials not explicitly covered by individual manufacturers.

Aiding the Cure

Protect the fresh work by covering it after allowing all “bleed water” to evaporate and the final troweling and detailing is fully complete. Use burlap or jute, 6 mil plastic sheeting or tarps. Unlike other Ecologic™ Mortar, Plaster and LimeWash applications, 6 mil plastic sheeting and tarps can be used to cover and cure lime concrete made with Ecologic™ LimeCrete Binder. Any cover may stain and mottle or leave impressions in the finish of a lime concrete surface so consider keeping the covers slightly off the surface to avoid this.

Working Time and Cure Time

Do not apply at temperatures below 40°F (4°C) or above 85°F (29°C). Working time is 2-3 hours. Initial cure is 24 hours. Protected cure is 72 hours before light foot traffic on concrete or stripping forms. Full cure reaching 95% strength is in 28 days.

Average Coverage

One 5-gallon pail of Ecologic™ LimeCrete Binder (35 lbs) when mixed with 2.5 parts (160 lbs total) of Ecologic™ Graded & Dried Sand blend (G) will result in approximately 1.75 c.f. of LimeCrete mortar.

Point about 70 sq. ft. of standard paving brick joints @ ⅜” wide and 2-1/4” deep.

Pour 6.5 sq.ft. of a 4” slab of lime concrete.

Shelf Life

24 months if kept sealed and away from moisture.

Safety

When mixed with water, lime-containing materials are alkali and can irritate skin. Wear adequate protective clothing to avoid prolonged contact with the binder. To avoid dust contact with eyes and possible inhalation wear glasses and the appropriate dusk mask especially in areas not properly ventilated.

Environmental Requirements

Materials must be stored and handled to protect them from damage and moisture in accordance with manufacturer’s instructions. It is recommended to take precautionary measures necessary to assure that excessive temperature changes do not occur. Do not install mixes containing Ecologic™ LimeCrete Binder unless minimum ambient temperature of 40°F (4°C) and a maximum of 85°F (29°C) continues to be maintained for a minimum of 24 hours prior to the application and until Ecologic™ LimeCrete has cured for 48 hours at this temperature range. No heavy rain should strike unprotected work during application and curing time. During hot dry weather protect all work from an uneven and excessive evaporation rate.

Disposal

Sweep and place bulk material in containers and safely remove for disposal. The final, cured product is not hazardous. Dispose of in a landfill in accordance with all local, state, and federal regulations.

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